



100 GROVE ST. | WORCESTER, MA 01605

December 29, 2016

Joseph Laydon
Town Planner
Grafton Municipal Center
30 Providence Road
Grafton, MA 01519

T 508-856-0321

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gravesengineering.com

**Subject: Brookmeadow Village – Phases 1A, 1B, 2, 4A, 4B and 4C
Updated Engineer's Opinion Construction Cost Estimates**

Dear Joe:

Per the request of the Grafton Planning Board and the applicant, Graves Engineering, Inc. (GEI) generated updated engineer's opinion construction cost estimates for Phases 1A, 1B, 2, 4A, 4B and 4C of the Brookmeadow Village residential subdivision. The estimates are based upon site visits performed by GEI through December 22, 2016.

These estimates supersede our previous Phase 1A, Phase 1B, Phase 2, Phase 4A and Phase 4B estimates dated January 25, 2016 and our previous Phase 4C estimate dated July 8, 2016.

Please find attached the point-by-point totals of the cost estimates based upon the following:

- The estimates are for the proposed work within the right-of-way and grading, etc. associated with road and utility construction only. The estimates do not include any of the proposed work associated with lot development.
- The estimates are based upon a definitive plan entitled "Brookmeadow Village" dated July 20, 2005 and last revised April 23, 2007, prepared by Guerriere & Halnon, Inc.
- The estimates contain two sections: the total cost of the project and the cost of work remaining as of our last site visit.
- Phase 1A consists of Brookmeadow Lane station 0+00 to station 22+50, Taft Mill Road station 26+25 to station 29+35, Detention Basin #1, Detention Basin #4 and sewer pump station upgrades. Phase 1A is the western portion of "Phase 1 Road" shown on Sheet 42 of the definitive plan.
- Phase 1B consists of Taft Mill Road station 0+00 to station 13+00 and Detention Basin #3. Phase 1B is the eastern portion of "Phase 1 Road" shown on Sheet 42 of the definitive plan.
- Phase 2 consists of Taft Mill Road station 13+00 to station 26+25 and Detention Basin #2 as noted as "Phase 2 Road" on Sheet 42 of the definitive plan.

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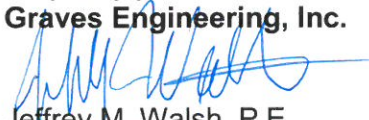
- Phase 4A consists of Brookmeadow Lane station 22+50 to station 27+00. Phase 4A is the southwestern portion of "Phase 4" shown on Sheet 42 of the definitive plan.
- Phase 4B consists of Brookmeadow Lane station 27+00 to station 33+50 and the entire length of Klondike Road. Phase 4B is the portion of Phase 4 between the middle of Lot 18 and the lot line separating Lots 24 and 25 plus all of Klondike Road as shown on Sheet 42 of the definitive plan.
- Phase 4C consists of Brookmeadow Lane station 33+50 to the cul-de-sac ending at station 37+30. Phase 4C is the portion of Phase 4 from near the intersection of Brookmeadow Lane and Klondike Road to the end of the cul-de-sac as shown on Sheet 42 of the definitive plan.
- With the exception of one bound (to be installed off Klondike Road), open space bounds throughout the subdivision have been installed.
- Please note, work has been completed in Phases 1A, 1B and 2. As such, the updated cost estimates for these phases have been "zeroed out".
- There has been a 20% administration and contingency added to the estimate total for inspections, contract administration and inflation.

The purpose of our construction estimates is to provide the Grafton Planning Board with an "engineer's opinion" of the possible construction value for the project. Our estimates are based upon typical municipally-bid public works projects subject to state wage rates. We use state wage rates as the municipality will be required to pay prevailing state wage rates should they ultimately become responsible for completing the project. The rates indicated within this estimate reflect current market conditions.

In addition, the construction estimates should not be construed to be a final list of items that are not complete. At each draw down requested by the developer, individual line items will be evaluated for completeness, unit prices may be revised to reflect the current cost of work and additional items may be added to or deleted from the estimates if needed. Streets and applicable amenities are not considered approved until they are accepted by Town vote as public streets or until the final release by the Planning Board for private streets.

If you have any questions or comments concerning this estimate, please feel free to contact our office.

Very truly yours,
Graves Engineering, Inc.



Jeffrey M. Walsh, P.E.

Vice President

Attachments (6)

cc: W. Greg Burrill; W.G.B Construction



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SITE DEVELOPMENT/SUBDIVISION CONSTRUCTION BUDGET						
PROJECT: BROOKMEADOW VILLAGE - PHASE 1A						
BROOKMEADOW LANE, STATION 0+00 TO 22+50 & BASIN #4						
TAFT MILL ROAD, STATION 26+25 TO 29+35 & BASIN #1						
DATE: December 29, 2016						
Budget of work to be completed.						
The following construction budget is based upon the Definitive Plan last revised:					04/23/07	
This estimate is based upon site visits performed through:					12/22/16	
			100% COST ESTIMATE		CONSTRUCTION	
			QUANTITY	VALUE	REMAIN'G - 12/22/16	VALUE
	UNITS	\$/UNIT			QUANTITY	
RIGHT OF WAY						
Clear & Grub	Acres	\$3,000.00	3.0	\$9,000.00	0	\$0.00
Earth Excavation	Cu. Yds.	\$4.00	13,000	\$52,000.00	0	\$0.00
Common Fill	Cu. Yds.	\$6.00	8,000	\$48,000.00	0	\$0.00
Finish Grading (Grass plots only)	Sq. Yds.	\$1.50	5,700	\$8,550.00	0	\$0.00
Loam and Seeding	Sq. Yds.	\$4.00	5,700	\$22,800.00	0	\$0.00
Trees	Each	\$250.00	126	\$31,500.00	0	\$0.00
ROADWAY						
Prep Subgrade	Sq. Yds.	\$1.20	7,400	\$8,880.00	0	\$0.00
Gravel Base	Cu. Yds.	\$12.00	2,500	\$30,000.00	0	\$0.00
Fine Grade & Roll	Sq. Yds.	\$1.50	7,400	\$11,100.00	0	\$0.00
Binder Course (2.75" Compacted Thk'ness)	Tons	\$65.00	1,060	\$68,900.00	0	\$0.00
Top Course (1.5" Compacted Thk'ness)	Tons	\$65.00	625	\$40,625.00	0	\$0.00
Top Course (1.5" Compacted Thk'ness)	Tons	\$110.00	0	\$0.00	0	\$0.00
Granite Curb Inlets	Each	\$200.00	24	\$4,800.00	0	\$0.00
Vertical Granite Curb	Lin. Ft.	\$25.00	190	\$4,750.00	0	\$0.00
Sloped Granite Edging	Lin. Ft.	\$18.00	4,300	\$77,400.00	0	\$0.00
Granite Transition Pieces	Each	\$250.00	40	\$10,000.00	0	\$0.00
Traffic Signage	Each	\$350.00	4	\$1,400.00	0	\$0.00
Street Lights	Each	\$1,100.00	4	\$4,400.00	0	\$0.00
Grade Roadside Swales	Sq. Yds.	\$2.00	2,800	\$5,600.00	0	\$0.00
Raise Structures (Sewers, Drains, etc.)	Each	\$250.00	60	\$15,000.00	0	\$0.00
SITE WORK						
Clear & Grub (slopes outside ROW)	Acres	\$3,000.00	1.2	\$3,600.00	0	\$0.00
Gravel Base (12") for Basin Access	Cu. Yds.	\$12.00	90	\$1,080.00	0	\$0.00
Earth Excavation (slopes outside ROW)	Cu. Yds.	\$4.00	6,400	\$25,600.00	0	\$0.00
Common Fill (slopes outside ROW)	Cu. Yds.	\$6.00	3,000	\$18,000.00	0	\$0.00
Finish Grading (slopes outside ROW)	Sq. Yds.	\$1.50	5,850	\$8,775.00	0	\$0.00
Loam & Seeding (slopes outside ROW)	Sq. Yds.	\$4.00	5,850	\$23,400.00	0	\$0.00
Silt Fences/Haybales, Install	Lin. Ft.	\$7.00	2,900	\$20,300.00	0	\$0.00
Silt Fences/Haybales, Maintain	Lin. Ft.	\$2.00	0	\$0.00	0	\$0.00
Clear & Grub (Detention Basin Areas)	Acres	\$3,000.00	1.4	\$4,200.00	0	\$0.00
Bulk Excavation Detention Basin Areas	Cu. Yds.	\$5.00	8,500	\$42,500.00	0	\$0.00
Loam & Seeding (Detention Basin Areas)	Sq. Yds.	\$4.00	11,200	\$44,800.00	0	\$0.00
Detention Basin Fencing	Lin. Ft.	\$20.00	1,640	\$32,800.00	0	\$0.00
Stone Walls (Near Wildlife Underpass)	Lin. Ft.	\$20.00	440	\$8,800.00	0	\$0.00

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			100% COST ESTIMATE		CONSTRUCTION	
			QUANTITY	VALUE	REMAIN'G - 12/22/16	
	UNITS	\$/UNIT			QUANTITY	VALUE
SIDEWALK						
Prep Subgrade	Sq. Yds.	\$1.20	1,160	\$1,392.00	0	\$0.00
Gravel Base (6")	Cu. Yds.	\$10.00	200	\$2,000.00	0	\$0.00
Fine Grade & Roll	Sq. Yds.	\$1.50	1,160	\$1,740.00	0	\$0.00
Concrete (4")	Cu. Yds.	\$100.00	130	\$13,000.00	0	\$0.00
DRAINAGE						
12" Reinforced Concrete Pipe	Lin. Ft.	\$25.00	2,420	\$60,500.00	0	\$0.00
15" Reinforced Concrete Pipe	Lin. Ft.	\$29.00	140	\$4,060.00	0	\$0.00
18" Reinforced Concrete Pipe	Lin. Ft.	\$35.00	140	\$4,900.00	0	\$0.00
24" Reinforced Concrete Pipe	Lin. Ft.	\$40.00	450	\$18,000.00	0	\$0.00
30" Reinforced Concrete Pipe	Lin. Ft.	\$45.00	30	\$1,350.00	0	\$0.00
8'x2' Box Culvert (Wildlife Underpass)	Lin. Ft.	\$250.00	75	\$18,750.00	0	\$0.00
15" RCP Flared End Section	Each	\$375.00	1	\$375.00	0	\$0.00
18" RCP Flared End Section	Each	\$425.00	1	\$425.00	0	\$0.00
Subdrains	Lin. Ft.	\$20.00	2,260	\$45,200.00	0	\$0.00
Head Walls	Each	\$400.00	6	\$2,400.00	0	\$0.00
Drain Manholes	Each	\$2,000.00	26	\$52,000.00	0	\$0.00
Drain Invert (Concrete or Brick)	Each	\$150.00	26	\$3,900.00	0	\$0.00
Catch Basins	Each	\$2,000.00	24	\$48,000.00	0	\$0.00
Drop Inlets	Each	\$2,000.00	2	\$4,000.00	0	\$0.00
Basin Outlet Structures	Each	\$3,000.00	2	\$6,000.00	0	\$0.00
Catch Basin Frame & Grate	Each	\$500.00	24	\$12,000.00	0	\$0.00
Drain Manhole Rim & Cover	Each	\$450.00	26	\$11,700.00	0	\$0.00
Rip Rap	Sq. Yds.	\$50.00	310	\$15,500.00	0	\$0.00
Stormceptors	Each	\$3,500.00	2	\$7,000.00	0	\$0.00
WATER						
8" DI Pipe	Lin. Ft	\$40.00	2,610	\$104,400.00	0	\$0.00
8" Valves	Each	\$800.00	5	\$4,000.00	0	\$0.00
Hydrants	Each	\$3,500.00	5	\$17,500.00	0	\$0.00
Water Service	Each	\$250.00	29	\$7,250.00	0	\$0.00
Water Booster Station	Allow	\$250,000.00	1	\$250,000.00	0	\$0.00
SEWER						
8" SDR 35 Sewer	Lin. Ft	\$40.00	2,460	\$98,400.00	0	\$0.00
Manholes	Each	\$2,200.00	14	\$30,800.00	0	\$0.00
Laterals: 6" SDR 35 PVC	Each	\$650.00	29	\$18,850.00	0	\$0.00
Sewer Brick Invert	Each	\$100.00	14	\$1,400.00	0	\$0.00
Pump Station Upgrade	Allow	\$50,000.00	1	\$50,000.00	0	\$0.00
ELECTRIC COMMUNICATIONS						
Electrical/CATV/Tel Conduit	Lin.Ft.	\$40.00	2,600	\$104,000.00	0	\$0.00
MISCELLANEOUS						
Bounds, Granite	Each	\$300.00	69	\$20,700.00	0	\$0.00
Acceptance Plans	Sheet	\$1,000.00	3	\$3,000.00	0	\$0.00
As Built Plans	Sheet	\$1,750.00	7	\$12,250.00	0	\$0.00

					CONSTRUCTION	
			100% COST ESTIMATE		REMAIN'G - 12/22/16	
	UNITS	\$/UNIT	QUANTITY	VALUE	QUANTITY	VALUE
		Subtotal:		\$1,745,302.00		\$0.00
		20% Contingency/Inflation:		\$349,060.40		\$0.00
PROJECT: BROOKMEADOW VILLAGE - PHASE 1A		TOTAL:	*	\$2,094,362.40	*	\$0.00
* This estimate was prepared to assist the Planning Board in establishing the amount of surety for this project. In accordance with Grafton Subdivision Rules and Regulations, the surety value established by the Board may vary from this estimate.						



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SITE DEVELOPMENT/SUBDIVISION						
CONSTRUCTION BUDGET						
PROJECT: BROOKMEADOW VILLAGE - PHASE 1B						
TAFT MILL ROAD, STATION 0+00 TO 13+00 & BASIN #3						
DATE: December 29, 2016						
Budget of work to be completed.						
The following construction budget is based upon the Definitive Plan last revised:			04/23/07			
This estimate is based upon site visits performed through:			12/22/16			
					CONSTRUCTION	
			100% COST ESTIMATE		REMAIN'G - 12/22/16	
	UNITS	\$/UNIT	QUANTITY	VALUE	QUANTITY	VALUE
RIGHT OF WAY						
Clear & Grub	Acres	\$3,000.00	5.0	\$15,000.00	0	\$0.00
Earth Excavation	Cu. Yds.	\$4.00	9,600	\$38,400.00	0	\$0.00
Common Fill	Cu. Yds.	\$6.00	23,700	\$142,200.00	0	\$0.00
Finish Grading (Grass plots only)	Sq. Yds.	\$1.50	2,900	\$4,350.00	0	\$0.00
Loam and Seeding	Sq. Yds.	\$4.00	2,900	\$11,600.00	0	\$0.00
Trees	Each	\$250.00	51	\$12,750.00	0	\$0.00
ROADWAY						
Prep Subgrade	Sq. Yds.	\$1.20	3,800	\$4,560.00	0	\$0.00
Gravel Base	Cu. Yds.	\$12.00	1,300	\$15,600.00	0	\$0.00
Fine Grade & Roll	Sq. Yds.	\$1.50	3,800	\$5,700.00	0	\$0.00
Binder Course (2.75" Compacted Thk'ness)	Tons	\$65.00	580	\$37,700.00	0	\$0.00
Top Course (1.5" Compacted Thk'ness)	Tons	\$65.00	320	\$20,800.00	0	\$0.00
Top Course (1.5" Compacted Thk'ness)	Tons	\$110.00	0	\$0.00	0	\$0.00
Granite Curb Inlets	Each	\$200.00	10	\$2,000.00	0	\$0.00
Vertical Granite Curb	Lin. Ft.	\$25.00	102	\$2,550.00	0	\$0.00
Sloped Granite Edging	Lin. Ft.	\$18.00	2,560	\$46,080.00	0	\$0.00
Granite Transition Pieces	Each	\$250.00	22	\$5,500.00	0	\$0.00
Traffic Signage	Each	\$350.00	2	\$700.00	0	\$0.00
Street Lights	Each	\$1,100.00	2	\$2,200.00	0	\$0.00
Grade Roadside Swales	Sq. Yds.	\$2.00	1,400	\$2,800.00	0	\$0.00
Raise Structures (Sewers, Drains, etc.)	Each	\$250.00	34	\$8,500.00	0	\$0.00
Retaining Walls	Sq. Ft.	\$25.00	10,100	\$252,500.00	0	\$0.00
Guard Rails	Lin. Ft.	\$15.00	480	\$7,200.00	0	\$0.00
Fence	Lin. Ft.	\$20.00	560	\$11,200.00	0	\$0.00
SITE WORK						
Clear & Grub (slopes outside ROW)	Acres	\$3,000.00	1.8	\$5,280.00	0	\$0.00
Gravel Base (12") for Basin Access	Cu. Yds.	\$12.00	100	\$1,200.00	0	\$0.00
Earth Excavation (slopes outside ROW)	Cu. Yds.	\$4.00	5,500	\$22,000.00	0	\$0.00
Common Fill (slopes outside ROW)	Cu. Yds.	\$6.00	15,200	\$91,200.00	0	\$0.00
Finish Grading (slopes outside ROW)	Sq. Yds.	\$1.50	8,600	\$12,900.00	0	\$0.00
Loam & Seeding (slopes outside ROW)	Sq. Yds.	\$4.00	8,600	\$34,400.00	0	\$0.00
Silt Fences/Haybales, Install	Lin. Ft.	\$7.00	2,100	\$14,700.00	0	\$0.00
Silt Fences/Haybales, Maintain	Lin. Ft.	\$2.00	0	\$0.00	0	\$0.00
Clear & Grub (Detention Basin Areas)	Acres	\$3,000.00	1.1	\$3,240.00	0	\$0.00
Bulk Excavation Detention Basin Areas	Cu. Yds.	\$5.00	3,500	\$17,500.00	0	\$0.00

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			100% COST ESTIMATE		CONSTRUCTION	
			QUANTITY	VALUE	REMAIN'G - 12/22/16	
	UNITS	\$/UNIT			QUANTITY	VALUE
Loam & Seeding (Detention Basin Areas)	Sq. Yds.	\$4.00	5,300	\$21,200.00	0	\$0.00
Detention Basin Fencing	Lin. Ft.	\$20.00	750	\$15,000.00	0	\$0.00
SIDEWALK						
Prep Subgrade	Sq. Yds.	\$1.20	590	\$708.00	0	\$0.00
Gravel Base (6")	Cu. Yds.	\$10.00	100	\$1,000.00	0	\$0.00
Fine Grade & Roll	Sq. Yds.	\$1.50	590	\$885.00	0	\$0.00
Concrete (4")	Cu. Yds.	\$100.00	50	\$5,000.00	0	\$0.00
DRAINAGE						
4" PVC Slow Drain Pipe	Lin. Ft.	\$20.00	26	\$520.00	0	\$0.00
12" Reinforced Concrete Pipe	Lin. Ft.	\$25.00	400	\$10,000.00	0	\$0.00
18" Reinforced Concrete Pipe	Lin. Ft.	\$35.00	1,150	\$40,250.00	0	\$0.00
24" Reinforced Concrete Pipe	Lin. Ft.	\$40.00	65	\$2,600.00	0	\$0.00
8'x10' Culvert	Allow	\$90,500.00	1	\$90,500.00	0	\$0.00
Subdrains	Lin. Ft.	\$20.00	400	\$8,000.00	0	\$0.00
Head Walls	Each	\$400.00	3	\$1,200.00	0	\$0.00
Drain Manholes	Each	\$2,000.00	11	\$22,000.00	0	\$0.00
Drain Invert (Concrete or Brick)	Each	\$150.00	11	\$1,650.00	0	\$0.00
Catch Basins	Each	\$2,000.00	10	\$20,000.00	0	\$0.00
Drop Inlets	Each	\$2,000.00	2	\$4,000.00	0	\$0.00
Catch Basin Frame & Grate	Each	\$500.00	12	\$6,000.00	0	\$0.00
Drain Manhole Rim & Cover	Each	\$450.00	11	\$4,950.00	0	\$0.00
Rip Rap	Sq. Yds.	\$50.00	120	\$6,000.00	0	\$0.00
WATER						
8" DI Pipe	Lin. Ft	\$40.00	1,320	\$52,800.00	0	\$0.00
8" Valves	Each	\$800.00	3	\$2,400.00	0	\$0.00
Hydrants	Each	\$3,500.00	3	\$10,500.00	0	\$0.00
Water Service	Each	\$250.00	9	\$2,250.00	0	\$0.00
SEWER						
8" D.I. Sewer	Lin. Ft	\$40.00	466	\$18,640.00	0	\$0.00
8" SDR 35 Sewer	Lin. Ft	\$40.00	925	\$37,000.00	0	\$0.00
Manholes	Each	\$2,200.00	9	\$19,800.00	0	\$0.00
Laterals: 6" SDR 35 PVC	Each	\$650.00	9	\$5,850.00	0	\$0.00
Sewer Brick Invert	Each	\$100.00	9	\$900.00	0	\$0.00
ELECTRIC COMMUNICATIONS						
Electrical/CATV/Tel Conduit	Lin.Ft.	\$40.00	1,315	\$52,600.00	0	\$0.00
MISCELLANEOUS						
Bounds, Granite	Each	\$300.00	34	\$10,200.00	0	\$0.00
Acceptance Plans	Sheet	\$1,000.00	2	\$2,000.00	0	\$0.00
As Built Plans	Sheet	\$1,750.00	4	\$7,000.00	0	\$0.00
Wetland Replication Areas	Allow	\$10,000.00	1	\$10,000.00	0	\$0.00

						CONSTRUCTION	
				100% COST ESTIMATE		REMAIN'G - 12/22/16	
	UNITS	\$/UNIT		QUANTITY	VALUE	QUANTITY	VALUE
			Subtotal:		\$1,345,713.00		\$0.00
			20% Contingency/Inflation:		\$269,142.60		\$0.00
PROJECT: BROOKMEADOW VILLAGE - PHASE 1B			TOTAL:	*	\$1,614,855.60		\$0.00
* This estimate was prepared to assist the Planning Board in establishing the amount of surety for this project.							
In accordance with Grafton Subdivision Rules and Regulations, the surety value established by the Board may							
vary from this estimate.							

SITE DEVELOPMENT/SUBDIVISION CONSTRUCTION BUDGET						
PROJECT: BROOKMEADOW VILLAGE - PHASE 2						
TAFT MILL ROAD, STATION 13+00 TO 26+25 & BASIN #2						
DATE: December 29, 2016						
Budget of work to be completed.						
The following construction budget is based upon the Definitive Plan last revised:					04/23/07	
This estimate is based upon site visits performed through:					12/22/16	
			100% COST ESTIMATE		CONSTRUCTION	
			QUANTITY	VALUE	REMAIN'G - 12/22/16	
	UNITS	\$/UNIT			QUANTITY	VALUE
RIGHT OF WAY						
Clear & Grub	Acres	\$3,000.00	1.5	\$4,560.00	0	\$0.00
Earth Excavation	Cu. Yds.	\$4.00	7,800	\$31,200.00	0	\$0.00
Common Fill	Cu. Yds.	\$6.00	8,600	\$51,600.00	0	\$0.00
Finish Grading (Grass plots only)	Sq. Yds.	\$1.50	3,000	\$4,500.00	0	\$0.00
Loam and Seeding	Sq. Yds.	\$4.00	3,000	\$12,000.00	0	\$0.00
Trees	Each	\$250.00	60	\$15,000.00	0	\$0.00
ROADWAY						
Prep Subgrade	Sq. Yds.	\$1.20	3,850	\$4,620.00	0	\$0.00
Gravel Base	Cu. Yds.	\$12.00	1,300	\$15,600.00	0	\$0.00
Fine Grade & Roll	Sq. Yds.	\$1.50	3,850	\$5,775.00	0	\$0.00
Binder Course (2.75" Compacted Thk'ness)	Tons	\$65.00	600	\$39,000.00	0	\$0.00
Top Course (1.5" Compacted Thk'ness)	Tons	\$65.00	330	\$21,450.00	0	\$0.00
Top Course (1.5" Compacted Thk'ness)	Tons	\$110.00	0	\$0.00	0	\$0.00
Granite Curb Inlets	Each	\$200.00	8	\$1,600.00	0	\$0.00
Vertical Granite Curb	Lin. Ft.	\$25.00	100	\$2,500.00	0	\$0.00
Sloped Granite Edging	Lin. Ft.	\$18.00	2,500	\$45,000.00	0	\$0.00
Granite Transition Pieces	Each	\$250.00	18	\$4,500.00	0	\$0.00
Traffic Signage	Each	\$350.00	2	\$700.00	0	\$0.00
Street Lights	Each	\$1,100.00	1	\$1,100.00	0	\$0.00
Grade Roadside Swales	Sq. Yds.	\$2.00	1,660	\$3,320.00	0	\$0.00
Raise Structures (Sewers, Drains, etc.)	Each	\$250.00	25	\$6,250.00	0	\$0.00
Retaining Walls	Sq. Ft.	\$25.00	2,640	\$66,000.00	0	\$0.00
Guard Rails	Lin. Ft.	\$15.00	190	\$2,850.00	0	\$0.00
Fence	Lin. Ft.	\$20.00	380	\$7,600.00	0	\$0.00
SITE WORK						
Clear & Grub (slopes outside ROW)	Acres	\$3,000.00	1.0	\$3,000.00	0	\$0.00
Gravel Base (12") for Basin Access	Cu. Yds.	\$12.00	90	\$1,080.00	0	\$0.00
Earth Excavation (slopes outside ROW)	Cu. Yds.	\$4.00	4,200	\$16,800.00	0	\$0.00
Common Fill (slopes outside ROW)	Cu. Yds.	\$6.00	4,100	\$24,600.00	0	\$0.00
Finish Grading (slopes outside ROW)	Sq. Yds.	\$1.50	4,900	\$7,350.00	0	\$0.00
Loam & Seeding (slopes outside ROW)	Sq. Yds.	\$4.00	4,900	\$19,600.00	0	\$0.00
Silt Fences/Haybales, Install	Lin. Ft.	\$7.00	2,100	\$14,700.00	0	\$0.00
Silt Fences/Haybales, Maintain	Lin. Ft.	\$2.00	0	\$0.00	0	\$0.00
Clear & Grub (Detention Basin Areas)	Acres	\$3,000.00	0.6	\$1,800.00	0	\$0.00
Bulk Excavation Detention Basin Areas	Cu. Yds.	\$5.00	8,000	\$40,000.00	0	\$0.00

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			100% COST ESTIMATE		CONSTRUCTION	
			QUANTITY	VALUE	REMAIN'G - 12/22/16	
	UNITS	\$/UNIT			QUANTITY	VALUE
Loam & Seeding (Detention Basin Areas)	Sq. Yds.	\$4.00	2,800	\$11,200.00	0	\$0.00
Detention Basin Fencing	Lin. Ft.	\$20.00	520	\$10,400.00	0	\$0.00
Stone Walls (Near Wildlife Crossing)	Lin. Ft.	\$20.00	310	\$6,200.00	0	\$0.00
SIDEWALK						
Prep Subgrade	Sq. Yds.	\$1.20	590	\$708.00	0	\$0.00
Gravel Base (6")	Cu. Yds.	\$10.00	100	\$1,000.00	0	\$0.00
Fine Grade & Roll	Sq. Yds.	\$1.50	590	\$885.00	0	\$0.00
Concrete (4")	Cu. Yds.	\$100.00	70	\$7,000.00	0	\$0.00
DRAINAGE						
4" PVC Slow Drain Pipe	Lin. Ft.	\$25.00	76	\$1,900.00	0	\$0.00
12" Reinforced Concrete Pipe	Lin. Ft.	\$25.00	1,014	\$25,350.00	0	\$0.00
18" Reinforced Concrete Pipe	Lin. Ft.	\$35.00	280	\$9,800.00	0	\$0.00
8' x 4' Culvert (Wildlife Underpass)	Allow	\$45,000.00	1	\$45,000.00	0	\$0.00
6' x 5' Culvert	Allow	\$27,500.00	1	\$27,500.00	0	\$0.00
Subdrains	Lin. Ft.	\$20.00	1,600	\$32,000.00	0	\$0.00
Head Walls	Each	\$400.00	3	\$1,200.00	0	\$0.00
Drain Manholes	Each	\$2,000.00	10	\$20,000.00	0	\$0.00
Drain Invert (Concrete or Brick)	Each	\$150.00	10	\$1,500.00	0	\$0.00
Catch Basins	Each	\$2,000.00	8	\$16,000.00	0	\$0.00
Drop Inlets	Each	\$2,000.00	1	\$2,000.00	0	\$0.00
Catch Basin Frame & Grate	Each	\$500.00	9	\$4,500.00	0	\$0.00
Drain Manhole Rim & Cover	Each	\$450.00	10	\$4,500.00	0	\$0.00
Rip Rap	Sq. Yds.	\$50.00	210	\$10,500.00	0	\$0.00
WATER						
8" DI Pipe	Lin. Ft	\$40.00	1,325	\$53,000.00	0	\$0.00
8" Valves	Each	\$800.00	3	\$2,400.00	0	\$0.00
Hydrants	Each	\$3,500.00	3	\$10,500.00	0	\$0.00
Water Service	Each	\$250.00	16	\$4,000.00	0	\$0.00
SEWER						
8" D.I. Sewer	Lin. Ft	\$40.00	470	\$18,800.00	0	\$0.00
8" SDR 35 Sewer	Lin. Ft	\$40.00	925	\$37,000.00	0	\$0.00
Manholes	Each	\$2,200.00	9	\$19,800.00	0	\$0.00
Laterals: 6" SDR 35 PVC	Each	\$650.00	16	\$10,400.00	0	\$0.00
Sewer Brick Invert	Each	\$100.00	9	\$900.00	0	\$0.00
ELECTRIC COMMUNICATIONS						
Electrical/CATV/Tel Conduit	Lin.Ft.	\$40.00	1,325	\$53,000.00	0	\$0.00
MISCELLANEOUS						
Bounds, Granite	Each	\$300.00	39	\$11,700.00	0	\$0.00
Wetland Replication Areas	Allow	\$6,000.00	1	\$6,000.00	0	\$0.00
Acceptance Plans	Sheet	\$1,000.00	3	\$3,000.00	0	\$0.00
As Built Plans	Sheet	\$1,750.00	2	\$3,500.00	0	\$0.00

					CONSTRUCTION	
					REMAIN'G - 12/22/16	
	UNITS	\$/UNIT	100% COST ESTIMATE QUANTITY	VALUE	QUANTITY	VALUE
		Subtotal:		\$948,798.00		\$0.00
		20% Contingency/Inflation:		\$189,759.60		\$0.00
PROJECT: BROOKMEADOW VILLAGE - PHASE 2		TOTAL:	*	\$1,138,557.60		\$0.00
<p>* This estimate was prepared to assist the Planning Board in establishing the amount of surety for this project. In accordance with Grafton Subdivision Rules and Regulations, the surety value established by the Board may vary from this estimate.</p>						

SITE DEVELOPMENT/SUBDIVISION						
CONSTRUCTION BUDGET						
PROJECT: BROOKMEADOW VILLAGE - PHASE 4A						
BROOKMEADOW LANE, STATION 22+50 TO 27+00						
DATE: December 29, 2016						
Budget of work to be completed.						
The following construction budget is based upon the Definitive Plan last revised:			04/23/07			
This estimate is based upon site visits performed through:			12/22/16			
			100% COST ESTIMATE		CONSTRUCTION	
			QUANTITY	VALUE	REMAIN'G - 12/22/16	
	UNITS	\$/UNIT			QUANTITY	VALUE
RIGHT OF WAY						
Clear & Grub	Acres	\$8,000.00	0.5	\$4,000.00	0	\$0.00
Earth Excavation	Cu. Yds.	\$6.00	1,100	\$6,600.00	0	\$0.00
Common Fill	Cu. Yds.	\$8.00	840	\$6,720.00	0	\$0.00
Finish Grading (Grass plots only)	Sq. Yds.	\$1.50	1,000	\$1,500.00	0	\$0.00
Loam and Seeding	Sq. Yds.	\$5.00	1,000	\$5,000.00	0	\$0.00
Trees	Each	\$400.00	23	\$9,200.00	0	\$0.00
ROADWAY						
Prep Subgrade	Sq. Yds.	\$1.50	1,400	\$2,100.00	0	\$0.00
Gravel Base	Cu. Yds.	\$30.00	470	\$14,100.00	0	\$0.00
Fine Grade & Roll	Sq. Yds.	\$3.00	1,400	\$4,200.00	0	\$0.00
Binder Course (2.75" Compacted Thk'ness)	Tons	\$90.00	190	\$17,100.00	0	\$0.00
Top Course (1.5" Compacted Thk'ness)	Tons	\$90.00	110	\$9,900.00	0	\$0.00
Top Course (1.5" Compacted Thk'ness)	Tons	\$110.00	0	\$0.00	110	\$12,100.00
Granite Curb Inlets	Each	\$300.00	4	\$1,200.00	0	\$0.00
Sloped Granite Edging	Lin. Ft.	\$20.00	750	\$15,000.00	0	\$0.00
Granite Transition Pieces	Each	\$250.00	8	\$2,000.00	0	\$0.00
Grade Roadside Swales	Sq. Yds.	\$2.00	270	\$540.00	0	\$0.00
Raise Structures (Sewers, Drains, etc.)	Each	\$300.00	8	\$2,400.00	8	\$2,400.00
SITE WORK						
Clear & Grub (slopes outside ROW)	Acres	\$8,000.00	0.2	\$1,600.00	0	\$0.00
Earth Excavation (slopes outside ROW)	Cu. Yds.	\$6.00	200	\$1,200.00	0	\$0.00
Common Fill (slopes outside ROW)	Cu. Yds.	\$8.00	160	\$1,280.00	0	\$0.00
Finish Grading (slopes outside ROW)	Sq. Yds.	\$1.50	510	\$765.00	0	\$0.00
Loam & Seeding (slopes outside ROW)	Sq. Yds.	\$5.00	510	\$2,550.00	0	\$0.00
SIDEWALK						
Prep Subgrade	Sq. Yds.	\$1.50	200	\$300.00	0	\$0.00
Gravel Base (6")	Cu. Yds.	\$30.00	40	\$1,200.00	0	\$0.00
Fine Grade & Roll	Sq. Yds.	\$3.00	200	\$600.00	0	\$0.00
Concrete (4")	Cu. Yds.	\$150.00	25	\$3,750.00	0	\$0.00
DRAINAGE						
12" Reinforced Concrete Pipe	Lin. Ft.	\$50.00	72	\$3,600.00	0	\$0.00
18" Reinforced Concrete Pipe	Lin. Ft.	\$57.00	320	\$18,240.00	0	\$0.00
24" Reinforced Concrete Pipe	Lin. Ft.	\$80.00	150	\$12,000.00	0	\$0.00
Subdrains	Lin. Ft.	\$28.00	400	\$11,200.00	0	\$0.00

			100% COST ESTIMATE		CONSTRUCTION	
			QUANTITY	VALUE	REMAIN'G - 12/22/16	
	UNITS	\$/UNIT			QUANTITY	VALUE
Drain Manholes	Each	\$2,400.00	2	\$4,800.00	0	\$0.00
Drain Invert (Concrete or Brick)	Each	\$250.00	2	\$500.00	0	\$0.00
Catch Basins	Each	\$2,300.00	4	\$9,200.00	0	\$0.00
Drop Inlets	Each	\$2,100.00	1	\$2,100.00	0	\$0.00
Catch Basin Frame & Grate	Each	\$600.00	5	\$3,000.00	0	\$0.00
Drain Manhole Rim & Cover	Each	\$550.00	2	\$1,100.00	0	\$0.00
WATER						
8" DI Pipe	Lin. Ft	\$70.00	450	\$31,500.00	0	\$0.00
Hydrants	Each	\$3,700.00	1	\$3,700.00	0	\$0.00
Water Service	Each	\$350.00	8	\$2,800.00	0	\$0.00
SEWER						
8" SDR 35 Sewer	Lin. Ft	\$45.00	450	\$20,250.00	0	\$0.00
Manholes	Each	\$3,000.00	2	\$6,000.00	0	\$0.00
Laterals: 6" SDR 35 PVC	Each	\$700.00	8	\$5,600.00	0	\$0.00
Sewer Brick Invert	Each	\$250.00	2	\$500.00	0	\$0.00
ELECTRIC COMMUNICATIONS						
Electrical/CATV/Tel Conduit	Lin.Ft.	\$45.00	550	\$24,750.00	0	\$0.00
MISCELLANEOUS						
Bounds, Granite	Each	\$315.00	2	\$630.00	0	\$0.00
Acceptance Plans	Sheet	\$1,000.00	1	\$1,000.00	1	\$1,000.00
As Built Plans	Sheet	\$1,900.00	1	\$1,900.00	1	\$1,900.00
			Subtotal:	\$279,175.00		\$17,400.00
			20% Contingency/Inflation:	\$55,835.00		\$3,480.00
PROJECT: BROOKMEADOW VILLAGE - PHASE 4A			TOTAL:	* \$335,010.00	*	\$20,880.00
* This estimate was prepared to assist the Planning Board in establishing the amount of surety for this project. In accordance with Grafton Subdivision Rules and Regulations, the surety value established by the Board may vary from this estimate.						

SITE DEVELOPMENT/SUBDIVISION CONSTRUCTION BUDGET					
PROJECT: BROOKMEADOW VILLAGE - PHASE 4B					
BROOKMEADOW LANE, STATION 27+00 TO 33+50 & KLONDIKE ROAD STATION 0+00 TO 12+50					
DATE: December 29, 2016					
Budgets of work for entire phase and for work yet to be completed.					
The following construction budget is based upon the Definitive Plan last revised:				04/23/07	
This estimate is based upon site visits performed through:				12/22/16	
	UNITS	\$/UNIT	100% COST ESTIMATE		CONSTRUCTION
			QUANTITY	VALUE	REMAIN'G - 12/22/16
					QUANTITY VALUE
RIGHT OF WAY					
Clear & Grub	Acres	\$8,000.00	2.1	\$16,800.00	0 \$0.00
Earth Excavation	Cu. Yds.	\$6.00	14,300	\$85,800.00	0 \$0.00
Common Fill	Cu. Yds.	\$8.00	7,400	\$59,200.00	0 \$0.00
Finish Grading (Grass plots only)	Sq. Yds.	\$3.00	3,900	\$11,700.00	700 \$2,100.00
Loam and Seeding	Sq. Yds.	\$5.00	3,900	\$19,500.00	700 \$3,500.00
Trees	Each	\$400.00	92	\$36,800.00	36 \$14,400.00
ROADWAY					
Prep Subgrade	Sq. Yds.	\$3.00	5,500	\$16,500.00	0 \$0.00
Gravel Base (12")	Cu. Yds.	\$30.00	1,800	\$54,000.00	0 \$0.00
Fine Grade & Roll	Sq. Yds.	\$3.50	5,500	\$19,250.00	0 \$0.00
Binder Course (2.75" Compacted Thk'ness)	Tons	\$110.00	820	\$90,200.00	0 \$0.00
Top Course (1.5" Compacted Thk'ness)	Tons	\$110.00	450	\$49,500.00	450 \$49,500.00
Granite Curb Inlets	Each	\$300.00	12	\$3,600.00	2 \$600.00
Vertical Granite Curb	Lin. Ft.	\$40.00	200	\$8,000.00	0 \$0.00
Sloped Granite Edging	Lin. Ft.	\$25.00	3,440	\$86,000.00	554 \$13,850.00
Granite Transition Pieces	Each	\$250.00	26	\$6,500.00	4 \$1,000.00
Street Lights	Each	\$2,000.00	3	\$6,000.00	0 \$0.00
Raise Structures (Sewers, Drains, etc.)	Each	\$300.00	35	\$10,500.00	35 \$10,500.00
Traffic Signage (Street Name, Stop)	Each	\$175.00	4	\$700.00	0 \$0.00
SITE WORK					
Clear & Grub (slopes outside ROW)	Acres	\$8,000.00	1.0	\$8,000.00	0 \$0.00
Earth Excavation (slopes outside ROW)	Cu. Yds.	\$6.00	4,200	\$25,200.00	0 \$0.00
Common Fill (slopes outside ROW)	Cu. Yds.	\$8.00	3,100	\$24,800.00	0 \$0.00
Finish Grading (slopes outside ROW)	Sq. Yds.	\$3.00	4,800	\$14,400.00	0 \$0.00
Loam & Seeding (slopes outside ROW)	Sq. Yds.	\$5.00	4,800	\$24,000.00	0 \$0.00
SIDEWALK					
Prep Subgrade	Sq. Yds.	\$3.00	840	\$2,520.00	175 \$525.00
Gravel Base (6")	Cu. Yds.	\$30.00	140	\$4,200.00	30 \$900.00
Fine Grade & Roll	Sq. Yds.	\$3.50	840	\$2,940.00	175 \$612.50
Concrete (4")	Cu. Yds.	\$175.00	93	\$16,275.00	20 \$3,500.00
DRAINAGE					
12" Reinforced Concrete Pipe	Lin. Ft.	\$50.00	1,000	\$50,000.00	0 \$0.00
18" Reinforced Concrete Pipe	Lin. Ft.	\$57.00	705	\$40,185.00	0 \$0.00
Drain Manholes	Each	\$2,400.00	12	\$28,800.00	0 \$0.00
Drain Invert (Concrete or Brick)	Each	\$250.00	12	\$3,000.00	0 \$0.00
Catch Basins	Each	\$2,300.00	12	\$27,600.00	0 \$0.00
Drop Inlets	Each	\$2,300.00	3	\$6,900.00	0 \$0.00

	UNITS	\$/UNIT	100% COST ESTIMATE		CONSTRUCTION	
			QUANTITY	VALUE	REMAIN'G - 12/22/16	QUANTITY VALUE
Catch Basin Frame & Grate	Each	\$700.00	15	\$10,500.00	0	\$0.00
Drain Manhole Rim & Cover	Each	\$600.00	12	\$7,200.00	0	\$0.00
WATER						
8" DI Pipe	Lin. Ft	\$70.00	1,870	\$130,900.00	0	\$0.00
8" Valves	Each	\$1,400.00	3	\$4,200.00	0	\$0.00
Hydrants	Each	\$3,700.00	3	\$11,100.00	0	\$0.00
Water Service	Each	\$350.00	22	\$7,700.00	0	\$0.00
SEWER						
8" D.I. Sewer	Lin. Ft	\$70.00	350	\$24,500.00	0	\$0.00
8" SDR 35 Sewer	Lin. Ft	\$52.00	1,220	\$63,440.00	0	\$0.00
Manholes	Each	\$3,000.00	11	\$33,000.00	0	\$0.00
Laterals: 6" SDR 35 PVC	Each	\$700.00	21	\$14,700.00	0	\$0.00
Sewer Brick Invert	Each	\$250.00	11	\$2,750.00	0	\$0.00
Sewer Manhole Rim & Cover	Each	\$750.00	11	\$8,250.00	0	\$0.00
ELECTRIC COMMUNICATIONS						
Electrical/CATV/Tel Conduit	Lin.Ft.	\$45.00	1,920	\$86,400.00	0	\$0.00
MISCELLANEOUS						
Bounds, Granite (Roadway)	Each	\$315.00	26	\$8,190.00	4	\$1,260.00
Bounds, Granite (Open Space)	Each	\$315.00	33	\$10,395.00	1	\$315.00
Acceptance Plans	Sheet	\$1,000.00	3	\$3,000.00	3	\$3,000.00
As Built Plans	Sheet	\$1,900.00	4	\$7,600.00	4	\$7,600.00
Subtotal:				\$1,293,195.00		\$113,162.50
20% Contingency/Inflation:						\$22,632.50
PROJECT: BROOKMEADOW VILLAGE - PHASE 4B TOTAL:						\$135,795.00
TOTAL (Rounded):					*	\$136,000.00
20% of "100% COST ESTIMATE" (Rounded):				*		\$259,000.00
* This estimate was prepared to assist the Planning Board in establishing the amount of surety for this project. In accordance with Grafton Subdivision Rules and Regulations, the surety value established by the Board may vary from this estimate.						



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SITE DEVELOPMENT/SUBDIVISION					T 508-856-0	
CONSTRUCTION BUDGET					F 508-856-0	
PROJECT: BROOKMEADOW VILLAGE - PHASE 4C					gravesengineering.	
BROOKMEADOW LANE, STATION 33+50 TO 37+30						
DATE: December 29, 2016						
Budgets of work for entire phase and for work yet to be completed.						
The following construction budget is based upon the Definitive Plan last revised:			04/23/07			
This estimate is based upon site visits performed through:			12/22/16			

			100% COST ESTIMATE		CONSTRUCTION	
	UNITS	\$/UNIT	QUANTITY	VALUE	REMAIN'G - 12/22/16	
					QUANTITY	VALUE
WATER						
8" DI Pipe	Lin. Ft	\$70.00	420	\$29,400.00	0	\$0.00
Hydrants	Each	\$3,700.00	1	\$3,700.00	0	\$0.00
Water Service	Each	\$350.00	6	\$2,100.00	0	\$0.00
SEWER						
8" SDR 35 Sewer	Lin. Ft	\$52.00	300	\$15,600.00	0	\$0.00
Manholes	Each	\$3,000.00	3	\$9,000.00	0	\$0.00
Laterals: 6" SDR 35 PVC	Each	\$700.00	6	\$4,200.00	0	\$0.00
Sewer Brick Invert	Each	\$250.00	3	\$750.00	0	\$0.00
Sewer Manhole Rim & Cover	Each	\$750.00	3	\$2,250.00	0	\$0.00
ELECTRIC COMMUNICATIONS						
Electrical/CATV/Tel Conduit	Lin.Ft.	\$45.00	420	\$18,900.00	0	\$0.00
MISCELLANEOUS						
Bounds, Granite (Roadway)	Each	\$315.00	8	\$2,520.00	8	\$2,520.00
Acceptance Plans	Sheet	\$1,000.00	1	\$1,000.00	1	\$1,000.00
As Built Plans	Sheet	\$1,900.00	1	\$1,900.00	1	\$1,900.00
			Subtotal:			\$68,030.00
			20% Contingency/Inflation:			\$13,606.00
PROJECT: BROOKMEADOW VILLAGE - PHASE 4C			TOTAL:			\$81,636.00
			TOTAL (Rounded):		*	\$82,000.00
			20% of "100% COST ESTIMATE" (Rounded):		*	\$66,000.00
* This estimate was prepared to assist the Planning Board in establishing the amount of surety for this project. In accordance with Grafton Subdivision Rules and Regulations, the surety value established by the Board may vary from this estimate.						